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ABSTRACT

The basic criteria for evaluating a nursing education program involve: the relevance of its goals, activities, and outcomes to the needs of the country or the community; the relatedness of its different parts in seeking and achieving common goals; and its accountability in assuming responsibility for its goals, methods, and outcome. The proposed design for evaluation discusses the collection of evidence, comparison of the data to the criteria, and analysis. The various purposes of program evaluation may include the development of an ongoing evaluation project, the incorporation of an evaluation system within new programs, or the promotion of comparative education studies. Further elaboration of the proposed evaluation design and forms which provide a framework for data analysis are appended. Three stages of the program are appropriate for assessment purposes: the initial planning phase, the implementation--including the goals and curriculum, and the long-term outcome. (Author/GDC)

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evaluation of educational programmes in nursing

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FOR REVIEW
POUR ANALYSE

EVALUATION OF EDUCATIONAL PROGRAMMES IN NURSING

by

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CONTENTS

	Page
Preface	5
Chapter I Introduction	7
Chapter II Criteria for evaluation	9
Chapter III Design for evaluation	14
Chapter IV Programmes of evaluation	18
Annex 1 Elaboration of the design	20
The community setting	20
Stage A Initial planning	22
Stage B Implementation	24
Stage C Long-term outcomes	45
Annex 2 Framework for analysis	49
Bibliography	66

PREFACE

This design for evaluation has been developed in answer to many requests for guidance in planning and evaluating educational programmes in nursing. Those responsible for the development and testing of the design are firmly committed to the fundamental concept of nursing as a response to the health care needs of individuals, families, and communities and to the idea that nursing education programmes should be developed in response to the needs of the students and the community to be served. The design was developed by the author with the assistance of the Division of Health Manpower Development, WHO, Geneva. The material was reviewed by medical and nursing colleagues in various parts of the world. The special assistance received from Olga Verderese and Mrs Bhaduri with the preparation and testing of the design and the forms for analysis is gratefully acknowledged.

CHAPTER I

INTRODUCTION

During the last 20–30 years countries and organizations have directed great efforts to the improvement of health through the development of services, educational programmes, demonstration and pilot projects, research studies, and so forth. In that time much evidence on the difficulties inherent in solving health problems and in developing services has been accumulated and now more emphasis is being placed on the evaluation of services and programmes and on the evaluation components of all new development and research projects.

Through the years, WHO has helped many countries to establish programmes for the training of nurses. Today concern is being voiced as to the development and outcomes of these programmes. To this end, the following questions are being asked:

What were the reasons for establishing the programme and how was the need determined?

What was the nature of the initial planning phase?

How has the programme grown and developed?

What problems is the programme experiencing and how are they being dealt with?

To what extent is the programme achieving its objectives?

In what ways is the programme, through its graduates, contributing to the improvement of the health status of the people and to the development of health services in the country?

As the topic of evaluation is discussed in every sphere of activity — health, education, engineering, politics — the parallel nature of problems and the similarity of questions in the different professions and disciplines is being noted. In fact, much broader and more fundamental issues are posed for evaluation, for example:

- the relevance of programme goals and purposes to the particular community or country,
- the relationship between processes and developments in the programme and programme purposes and goals,
- the factors tending to support and further the development of the programme or, conversely, to hinder it.

The questions that evaluation seeks to answer and which apply in the study of any service or programme, be it a nursing programme, a nursing service, a university, a hospital, etc., may be stated as follows:^{a, b, c, d}

What is the worth of the approach, operations, and activities of the programme in fulfilling its goals and purposes?

What factors influence the programme either to support or impede its development?

To what extent may the programme goals themselves be said to be valid?

It is timely to develop a design for the evaluation of training programmes in nursing following many suggestions relating to nursing education made by the WHO Expert Committee on Nursing in 1966.^c Some recommendations from the report are as follows:

The programme should be geared to the needs of the students and of the community to be served. Emphasis should be on the development of the following qualities and abilities: an understanding of human behaviour; an alert, questioning and critical mind; power of observation; insight and foresight; imagination and creativity; adequate knowledge and skills in nursing; ability to communicate effectively; and, within the ambit of their own competence, ability to make sound judgements and decisions; ability to anticipate health needs and to institute nursing measures; and willingness to grow professionally.

Specifically, in regard to preparation for the "health teaching" function of nursing, lack of grounding in social sciences has tended to limit the nurse's ability to listen to patients productively and to establish the two way communication that is fundamental to a "teaching" relationship.

If nursing students are to be fully prepared to face a future of change, a problem-solving approach should be adopted from the beginning of their education. Students taught in this way will be challenged to think; they will learn to seek answers for themselves rather than to rely on someone else's experience or on the memorization of facts; they will be able to continue their enquiring attitude and problem-solving approach as they graduate and enter employment. ... the programme must be geared to realities.

These recommendations support the fundamental notion of nursing as a response to the health care needs of the individual or, on a larger scale, to those of the community or country. Furthermore, these recommendations assume that the nursing profession has the opportunity to observe, gather information on, and know the individual or community as a basis for assessing the health needs. Owing to its complexity, assessing the needs of individuals and groups depends on the ability of the profession to establish a relationship or a communication system with the individual, community, or group. Nursing is regarded as a problem-solving procedure that is based on a knowledge of the sciences and that is developed through testing nursing practices in particular situations. These recommendations of the Expert Committee on Nursing in 1966 provide a perspective for evaluation: the validity of the programme goals as related to the essential components of nursing and to the health care needs of the situation (individual, community, country).

^a SUCHMAN, E. *Evaluative research*. New York, Russell Sage Foundation, 1967, pp. 27-32.

^b HERZOG, E. *Some guidelines for evaluative research*. Washington, DC, US Department of Health, Education and Welfare, Social Security Administration, Children's Bureau, 1959, p.2 (Children's Bureau Publication No. 375-1959).

^c ANDERSON, O. Planning in relation to evaluation. In: *Proceedings of the First National Conference on Evaluation in Public Health*, 1955, University of Michigan, Ann Arbor, Michigan, School of Public Health, 1956, pp. 7-15.

^d ALLEN, M. & REIDY, M. Learning to nurse: the first five years of the Ryerson nursing programme. Toronto, Registered Nurses' Association of Ontario, 1971, pp. 1-3.

^e WHO Technical Report Series No. 347, 1966.

CHAPTER II

CRITERIA FOR EVALUATION

In this book certain values or qualities are identified as worth while to the development of an educational programme. These values become the criteria against which all aspects of the programme are judged. Evaluation involves assessing these criteria in relation to the various aspects of the programme and to the programme as a whole. The evaluation procedure involves gathering objective evidence that is representative of the programme and analysis of the evidence in relation to the criteria to ascertain the state of development of the programme. The evaluation report gives the results of the analysis in a manner that establishes the validity of the findings and the credibility of the evaluation as a whole. The information provided in the evaluation report is of value to the teaching staff in decision-making in relation to problems arising during the programme.

Selection of criteria

Criteria should be selected to be of assistance in answering the questions posed by evaluation. The values or qualities deemed worth while change and evolve as society's views on what is valuable change. For this reason, the criteria by which we judge anything reflect the prevailing values of the times, which in disciplines allied to science depend to some extent on the current state of knowledge. Therefore, it seems reasonable to select values that are timely and have worldwide appeal, not only in nursing, but in the wider domains of health, education, and politics.

There are many ways to consider an educational programme. For the purposes of this book, a nursing programme is regarded as consisting of a number of related parts — curriculum, teaching of nursing, practice of nursing and research, and administration — functioning together to achieve common goals or purposes. The values that reflect the development of a programme are thought to be: the relevance of the goals, activities, and outcomes of the programme to the particular community or country; the relatedness of the different parts of the programme in seeking common goals and in discovering the means to achieve them; and the accountability of the programme in assuming responsibility for its goals, methods, and outcomes. Thus relevance, relatedness, and accountability are viewed as the critical attributes or criteria of programme development.

In the remainder of this chapter the thesis introduced above is elaborated by considering these criteria more thoroughly.

Relevance — *The extent to which the goals, activities, and outcomes of the nursing educational programme are a response to the needs of a particular community or country.*

Ideally a nursing educational programme is established in response to the health situation and to the needs for health and nursing services at a point in time and in relation to the attitudes of that particular community or country towards health goals, for example, prevailing knowledge, values, plans, and innovations. The goals and purposes of the programme are related to the function the graduates will perform, which is, in turn, related to the health problems of the country and the type of care and services that these problems demand. The extent to which the programme is responding to the needs of the community, indicators of which may be economic, educational, political, may be said to be indicative of the degree of relevance of the programme. The relevance is low when the goals and purposes of the programme are not influenced by the changing needs for nursing and for health services.

Some examples indicating a lack of relevance are given below:

A situation where the traditional basic educational programme prepares the nurse for urban nursing, particularly in hospital, when:

all statistics, plans, and developing services indicate a trend toward decentralization and services more closely allied to local community structures, both urban and rural, or the majority of people live in rural areas, where poor health and disease prevail, where health services are either lacking or inadequate, and where utilization of health services and hospitalization in illness is not part of the normal pattern of the people.

A situation where there are insufficient positions for the type of nurse prepared. If the resulting unemployment may lead to a mass exodus of nurses from the country or to a deployment of nurses in positions for which they are unprepared or, in some cases, overprepared.

The criterion of relevance is of concern not only with respect to the nursing content of the programme as previously described, but also with respect to the methods of teaching. It is expected that the methods of teaching and the relations between teachers and students will in general fit the expectations and values of the community and be appropriate, in particular, to the type of students recruited into the programme. A low degree of relevance may be said to exist when the teaching programme and teaching methods are replicas of those employed in a programme in another school or country. In another situation, new methods and techniques of teaching may be introduced that were not incorporated into the original plan and thus are not relevant to that programme.

Relevancy in teaching is usually related to the teaching staff's understanding of the culture of the community and of the learning modes of the people.

The degree of relevance of a programme to the community and country will, over time, influence its rate of growth, resources, and viability.

Relatedness — *The extent to which the parts of the nursing programme, i.e., curriculum, teaching of nursing, practice of nursing and research, and administration, influence each other in developing programme goals and in shaping their achievement.*

The various parts of a nursing programme influence each other. The way the staff practise nursing influences the way they teach nursing. The teaching of nursing influences the overall plan, that is the curriculum, and all aspects of administration. To the extent that these influences are related to the definition and attainment of overall goals, the institution may be said to behave as a whole. With time the various parts of an institution may develop greater wholeness and a closer association between means and ends. Increased unification of this nature, where teachers, students, and administrators are working toward common goals, is suggestive of a high degree of relatedness.

On the other hand, teachers of nursing may each work to produce a different kind of nurse. The administration of the school may support teaching that is contrary to the staff's approach to the teaching of nursing or, on the other hand, students may be unable to learn to nurse in the way that nursing is taught. In these instances, when one part of a programme has minimal influence on another part and when each is pursuing its own direction, we speak of the parts as being independent. These phenomena may lead to disruption of the school or to a type of coexistence; each part or segment involved in its own activities and achieving particular ends. Such progressive segregation suggests a low degree of relatedness.

The following situations indicate relatedness in a nursing education programme:

- The teacher and nurse in charge of the service hold some views in common as to the fundamental nature of nursing.
- The teacher helps the student to respond to the hospital ward or community setting as it is and not as it should be; in other words, the student learns to relate nursing to the real situation and not to some ideal situation.
- Clinical situations are selected so as to provide the student with an opportunity to work together with other health professionals as part of a team.

Accountability — *The extent to which the programme teaches the student nurse that the primary responsibility in nursing is to the patient.* (Similarly in teaching, the primary responsibility is to the student.)*

This characteristic, essential to a definition of nursing, must be clarified as a basis for assessing the accountability of a programme with respect to the nature of the nursing that is taught.

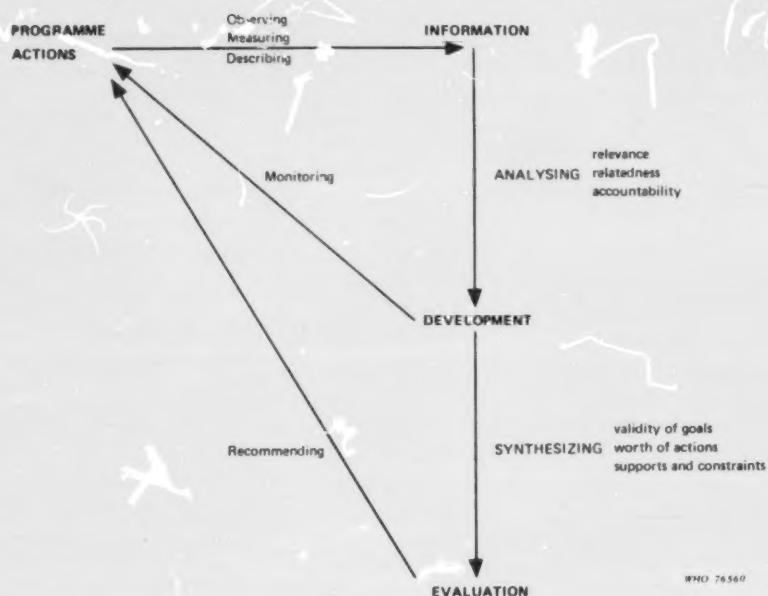
Assessment of the core function in nursing — responding to the patient — is a major consideration in assessing the development of a nursing programme. In addition to the goals and purposes of the programme, the

* The term "patient" denotes a basic unit or situation to which a nurse responds in providing nursing; this the basic unit may be a family, a group, a ward unit, a community, or country.

types of nursing course, and the way in which nursing is taught, the nature of supporting and related courses, and the preparation and experience of teachers, all contribute to the study of accountability in a nursing programme; that is, how the student learns to develop nursing action as a response to the particular patient.

Within most health services, the nursing component predominates, therefore more nurses are required than other health professionals. For this reason, in times of change and experimentation, nursing, more than any other health profession, has to sustain a good deal of strain and is subject to greater pressures for change from the public, from other health professions, from auxiliary and assistant health workers, and from within the nursing profession itself. In such circumstances, nurses must be accountable for shaping the path of nursing in the building of new health services. To do so

FIG. 1. MODEL OF THE EVALUATION PROCESS



demands understanding of the fundamental nature of nursing. Failure in accountability undoubtedly leads to the partition of nursing among new health professions and, in many instances, to the retraining of nurses for different roles in the health field. Educational institutions, as the forerunners of change, can demonstrate accountability in guiding the evolution of nursing and of nursing services.

Problems of accountability appear in many guises and forms. A programme whose goals and experiences are geared to teaching medical and nursing procedures, intensive and custodial care, formula-type nursing,⁴ or nursing approaches predominantly in the assistant-to-physician role, fail in accountability. Accountability in the teaching of nursing demands that the teacher assist the student to focus on the patient and to perceive his situation, including the therapeutic regime, the procedures, the hospital or other setting, plus a host of additional factors unique to him and, on the basis of an assessment of this information, to respond to his need for care or assistance. In other than episodic contacts, time is a feature of the process of nursing. Another example of accountability may be observed in a health team conference in which the nurse member describes and interprets the function that nursing can provide in the developing health services and identifies the nature of preparation for this function.

The criteria of relevance, relatedness, and accountability when applied to an educational programme assist in describing the development of that programme and form the basis of the evaluation process. Fig. 1 outlines the process of evaluation. First the evaluator observes, measures, and describes the programme goals and actions and, in general, collects information to provide a data base for analysis. The criteria provide the structure for the analysis and the results, conclusions, or inferences indicate the development of the programme. The state of development provides the information base for monitoring the programme so that the direction of goals and activities may be changed; and the accumulated information provides a "feed forward" into the programme plans. This process describes the everyday monitoring and shaping of the nursing programme by the persons involved. In fact, this phase of evaluation is carried out primarily by the teaching staff and is the basis for self study and self evaluation. Methods for the collection of information and for its analysis should be built into the framework of the programme in the early planning stage.

Periodically, a more formal type of evaluation may be carried out for purposes of accreditation, research, examination by parent institution, or at the request of the teaching staff. As may be noted in Fig. 1, the information on development is scrutinized and synthesized in relation to the questions that the evaluation seeks to answer. This phase usually leads to a series of recommendations for the purpose of directing the future development of the nursing programme.

⁴ Formula type nursing care plans for types of patients or for types of hospitals.

CHAPTER 1/1

DESIGN FOR EVALUATION^a

The design for evaluation provides for the collection over a period of time of information on the nursing programme that is appropriate to its setting. Secondly, the design relates this information to the criteria and suggests the logical basis upon which an assessment of the development of the programme can be made. The actual evaluation draws on these findings to answer the questions posed:

(1) *Types of evidence*

Upon what types of evidence are judgments as to the relevance, relatedness, and accountability of a programme made?

What are the characteristics of a nursing programme about which information must be sought to provide the required evidence?

(2) *Methods of collection*

How is the evidence, including the specific details, to be collected to ensure validity, reliability and representativeness?

(3) *Analysis*

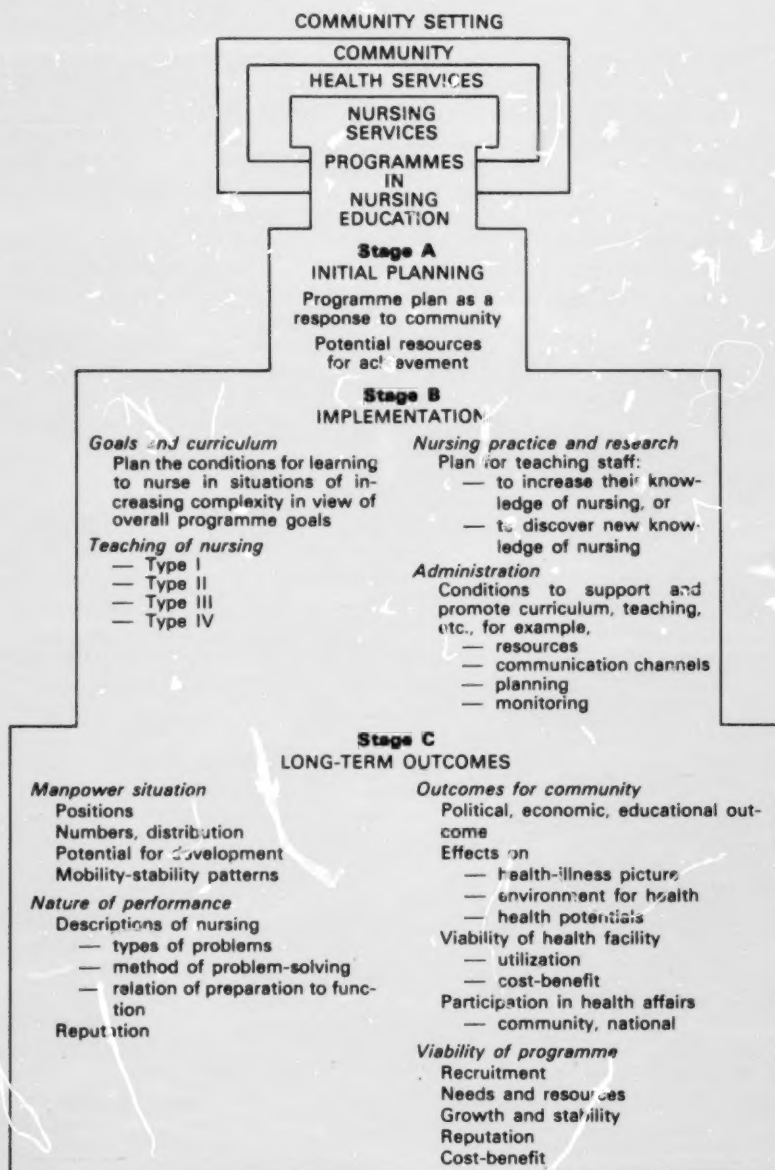
How can logical operations of analysis be specified to translate the evidence collected into conclusions and judgments as to the state of the criteria, thence into an assessment of development and finally, into an evaluation of the programme as a whole?

One approach to the problems of evaluation is to visualize the institution or programme as a system. A system may be defined as a set of related elements interacting for a particular purpose and being steered in the process by feedback. In this context the term feedback refers to the information the system receives from monitoring the relation between developments in the system and the overall system goal and from monitoring the responses, both environmental and internal, to these developments.

An educational programme in nursing may be a system within a university school, a hospital school, or an independent school. Students enter the system, learn to nurse there, and finally leave as graduates. The programme is influenced by the university, the community, the clinical facilities, and other institutions, and the graduates, through their work, have an influence on the community, the feedback from this eventually having an influence on the system and on potential recruits. An evaluation is directed toward gathering information on the various parts of the system so that one may have greater understanding of its dynamics. This knowledge increases the

^a Annex 1 contains more specific information on the types of evidence and methods of data collection and analysis.

FIG. 2. STAGES OF AN EDUCATIONAL PROGRAMME IN NURSING IN RELATION TO ITS COMMUNITY SETTING



predictability of outcomes and the probability of success when modifications or changes are being considered.

Stages of development of an educational programme

Fig. 2 indicates the main features in the various stages of an educational programme in nursing that must be studied in an evaluation and the relation of these stages to the community setting. The community setting includes the community, health services, nursing services, and the prevailing situation in nursing education within which the programme develops.

Stage A outlines the initial planning phase. Information is required on how the proposed programme plan was developed in response to the needs of the community and the extent to which the potential resources for the achievement of the programme were planned and obtained.

Stage B concerns the implementation of the programme including programme goals and curriculum, teaching of nursing, the practice of nursing and research, and administration. Information is required on the interrelations among these parts, on their evolution with time, on the outcomes for student learning and other aspects of development, and on the constraining and supporting factors in the process.

Stage C outlines what are considered the long-term outcomes of an educational programme in nursing. The manpower situation gives information on the availability of positions for which the graduates are prepared, the positions which graduates actually hold, and the numbers of graduates and their distribution in these positions. As regards outcomes for the community, information is required on the nature of practice in which the graduates are engaged and the actual effect the performance of nurses has on community health. Information is also required on the viability of the programme: the extent to which it grows and changes yet gains in stability and permanence.

Methods for the collection of data are devised in relation to the nature of the evidence required for consideration of the criteria. The information that is subsequently collected is then analysed to assess the extent to which the criteria of relevance, relatedness, and accountability are fulfilled in each stage.

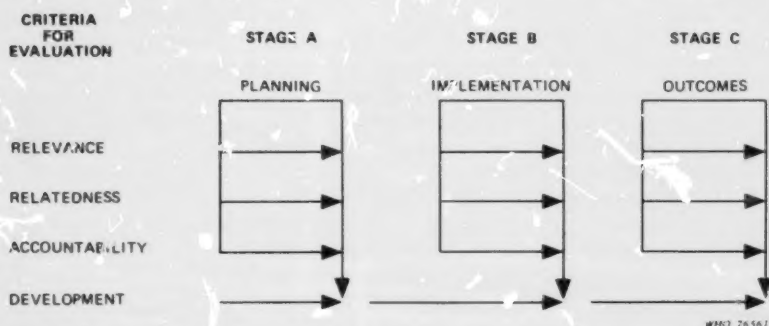
We are now ready to look at the nursing programme as a system arising within a community setting and comprised of three stages with goals and purposes towards which its activities are directed. The framework of criteria should be used to examine the information that is collected in each stage of the nursing programme and Fig. 3 depicts a method of analysing and synthesizing this information. The diagram indicates that the degrees of relevance, relatedness, and accountability in a programme reflect its development at a point in time, during a stage of the programme, or through time for the programme as a whole.

Having reached conclusions on the degrees of relevance, relatedness, and

accountability in each stage and for the programme as a whole, the profile of development across all stages emerges. It is to the results of this analysis that the particular questions of the evaluation may then be posed:

- What is the worth of the approach, operations, and activities of the programme in fulfilling its goals and purposes?
- What supporting and constraining factors influence the programme?
- To what extent are the goals themselves valid?

FIG. 3. ANALYTICAL FRAMEWORK FOR ASSESSING DEVELOPMENT IN AN EDUCATIONAL PROGRAMME IN NURSING



In responding to these questions, one looks first at developments in the three stages to obtain an idea of the process of development and to identify movements or operations that seem to be directed towards the purposes and goals and those that are at variance with the goals. Secondly, the outstanding supports to and constraints on the development of the programme are identified.

Although all the criteria are significant in responding to the first two questions in the evaluation phase, the criterion of relatedness is particularly appropriate. In considering the last question posed for evaluation, the criteria of relevance and accountability are pertinent to the validity of the goals and purposes of the programme as a response to the community's needs for health care and nursing services. In general, a study of the long-term outcomes makes it possible to judge the aims and purposes originally established during the initial planning stage and later evolved through the life of the programme. If the evidence leads one to proclaim both the relevance and accountability of the programme, the aims and purposes are justified and their validity is established.

CHAPTER IV

PROGRAMMES OF EVALUATION

In this chapter some of the objectives to be attained through programmes of evaluation are identified and some of the critical aspects of each are described.

(1) To enable each individual school to develop an ongoing evaluation project for purposes of study, assessment, and development

Programmes of evaluation are executed by the teaching staff associated with a programme and by the institutions in which they are housed, for the purposes of studying and examining their performance as a basis for setting future directions and for modifying their plans and methods. Similarly, staff members individually and in groups may continue the same process of evaluation in their courses and in the various sections of the programme in which they are engaged. The nucleus of participants in this type of evaluation project is the staff of the department. To this group may be added student representatives, administrators, and other persons from the institution who are concerned in a particular way with the development of the nursing programme. Consultant assistance in the method and process of evaluation may be procured periodically to help the group review their work and plan the next steps. In addition, other types of consultant may be required at times in connexion with, for example, content of nursing programme, or content in relation to definition and description of the criteria of relevance, relatedness, and accountability.

(2) To incorporate a system for evaluation within new demonstration-type nursing programmes

It is imperative in demonstration projects that the method of evaluation be incorporated within the programme itself at the initial planning stage, and that the following aspects are specified: the questions to be answered, the data to be collected, the methods of collection and analysis, the responsibility for aspects of evaluation to be attached to various positions, etc.

(3) To promote the study of comparative education in nursing

This objective may be subdivided as follows:

- (a) To obtain further information through evaluative research of programmes that appear to be coping satisfactorily with one or more of the major problems facing programmes in nursing education.
- (b) To study and evaluate one aspect of a programme in a number of

schools to provide data for comparative study of particular questions of curriculum, teaching of nursing, etc.

(c) To highlight problems in the educational field in which research is required and to recommend programmes of research in the teaching of nursing and in curriculum design.

Researchers and consultants involved in evaluation projects in individual programmes have the opportunity to compare their findings with those of other programmes and, therefore, to begin the study of comparative education in nursing. In nursing education this approach is so far virtually unexplored, although it is in this way that we shall gain a broader view of problems in nursing education. The opportunity for comparative study at an international level in different cultures provides one avenue of endeavour. Another equally fruitful field is the comparative study of similar types of programme within one country or cultural area, where individual programmes have had the opportunity and the time to become increasingly differentiated from each other, i.e., in a country with a large number of well established programmes for the preparation of nurses. The comparative study of education in nursing will provide a valuable line of inquiry for future researchers interested in evaluative research and in comparative design.

Finally, it must be noted that, as evidence is collected and programmes are evaluated in terms of the criteria of development, i.e., relevance, relatedness, and accountability, knowledge will eventually accumulate on the operational and behavioural indices of these criteria under varying sets of conditions. This is the road to increasing precision in attempts to quantify and thence to measure more accurately these aspects of programme performance.

ANNEX I

ELABORATION OF THE DESIGN

This section describes the nature of the evidence to be obtained, the methods of data collection, and the approaches to analysis and evaluation. The community setting and the different stages of the educational programme in nursing are dealt with separately.

THE COMMUNITY SETTING

For the purposes of this study it will be assumed that data on the community setting — community, health services, nursing services, and programmes in nursing education — have already been collected and are available in some form. Furthermore, it is assumed that a system of nursing exists or has been formulated in response to a national or regional health plan and is currently being implemented. Given these premises, the following types of information will be available in some fashion, although the information may be incomplete and outdated:

State of health and health services

- statistics — population, health problems
- policy and programme information
- social and economic data
- health resources data
- health technology data
- concerns, goals, and beliefs of people
- direction of prevailing health services and their relation to, and integration with, traditional health practices and beliefs
- assessment by professionals of the needs in relation to environmental safety and basic health requirements

System of nursing and nursing education

- function of nursing
- categories of nurse and auxiliary — differentiation of functions
- numbers, distribution, positions
- organization of nursing services
- educational programmes for nurses and auxiliaries — relations with educational system
- relations with health professions, government, and the public

The discrimination of function within nursing and the differentiation of function by category of nurse provide valuable information concerning the system of nursing and nursing education in a country or community. We

may assume that the scope and complexity of nursing is almost infinite in view of man's developing needs for health. Yet, a major difficulty for nursing leaders, for employers, and for the public at large is to discriminate, within the overall function of nursing, the great variation in complexity of the actual activities that nurses are called upon to perform. In most societies, this situation has warranted the preparation of two categories of nurse, both of which may in their basic educational programme be prepared for the so-called expanded role appropriate to the scope of their particular function. For this reason, identification of the variation in the scope of performance and complexity of activity provides the evaluator with some basis for examining the information on nursing and nursing education that is available from the community. The evaluator might pose the following questions:

- In what way does the system of nursing in the country or community deal with the allocation of nurses in relation to the provision of health services?
- To what extent is the potential function of nursing being performed?

Some of the bases for deciding on the nature of the nursing required are described below. Discrimination in this way provides a practical basis for differentiating the nursing functions, and therefore for determining the types of nurse required.

1. Nature of problem

The problems presented by the patient may be understood and the solutions known, or the problems may be poorly understood in which case the courses of action must be created and tested.

2. Size of the situation

The focus of attention may be the individual or a collectivity, i.e., family, group, institution, or community.

3. Time perspective

Attention may be required and directed to the immediate needs of the individual — to the daily plan of care — or to the welfare of the individual over a longer period, i.e., long-term planning and the promotion of health.

4. Involvement of other professionals and interested persons or groups

A few professionals from other fields may be involved, for example, in the care of a sick person within the domain of his family, or many professionals and representatives of government, voluntary agencies, and the public may be concerned, for example, with health services in a community.

5. Scope of responsibility

A nurse may be primarily responsible for her own performance or may

be responsible for the performance of a number of nurses and auxiliaries.

These dimensions are not all-inclusive, yet they serve to demonstrate differences in the functions of nursing. Two examples illustrate these differences:

Example A

A nurse may be responsible for the care of a small number of postsurgical patients (problem understood) in hospital each day and for relations with the patients' families and with other health professionals concerned with care of the patients.

Example B

The nurse and associated staff may be responsible for the health (less well understood problem) of the families in a community on a regular and long-term basis and for referrals to, and working relationships with, other health professionals involved in the health service.

It is expected that the system of nursing in the country will account for the variation in the nature of performance required of the nurse and that the programmes in nursing education will reflect these differences in the type of nurse prepared, in the methods of teaching employed, and in the nature of the curriculum plan. Some programmes include a number of courses in related disciplines to assist students to cope knowledgeably with all types of problems, known and unknown, and confront students with nursing situations involving numerous variations on the situations mentioned above. Other programmes concentrate more on nursing courses and limit the complexity of problems with which students learn to deal.

Further information on the relation between the community and nursing and nursing education may be found in another WHO publication, *Basic nursing education programmes*,⁴ in particular in the section on "Fact-finding: the study of a community."

STAGE A — INITIAL PLANNING

A study of the initial planning stage will provide evidence that is critical to an understanding of subsequent happenings in a programme. In fact, the origins of many of the strengths and problems that materialize later can be traced to this stage. For example, the underlying motivation for starting the programme can often be deduced from examination of the original goals set for the programme and of the resources sought at that time. Critical decisions such as the following are usually made in the initial planning stage: type of nurse to be prepared; basic or postbasic programme; university, college, or hospital programme; location of the programme within the organizational structure of the institution; nature of the curriculum plan, as regards length, and in particular, as regards who will provide the courses in related disciplines, such as physiology, microbiology, and sociology; initial relations and arrangements with hospitals and agencies as regards clinical

⁴ WHO Public Health Papers No. 7, 1961, pp. 10-35.

practice; funding and overall costs. Evidence gathered regarding Stage A is used in assessing the extent to which the aims and purposes of the programme are related to the health problems and health services of the particular community or setting and the extent to which efforts have been made to obtain or commit resources and potential resources for the attainment of these aims.

Nature of the evidence

Response to the community

In relation to the derivation of the original aims, purposes and plans of the programme the following information should be collected:

- (a) Persons involved in the planning stages — what or whom they represented and their contribution to the purposes and plan of the programme.
- (b) Studies or data that the planning group collected (demographic information, health problems, health and nursing services), the method of analysis and assessment used, and the conclusions.
- (c) Procedure followed by the group to generate the aims and purposes of the programme; in other words, the rationale for the programme.
- (d) Other plans or decisions made at this time and their relation to the aims and purposes of the programme.

Resources

In this connexion information is required on the following aspects:

- (a) Support for the programme at the appropriate levels of government:
 - participation in the initial planning stage by nurses and others from departments of health at the appropriate levels of government,
 - private and/or public endorsement of the programme,
 - provision for and concern with financial support.
- (b) Availability of resources from the parent institution or sponsoring body, for example, in connexion with a university nursing course:
 - a position in the university structure that permits full participation of staff and students of the nursing programme in the affairs and life of the university, i.e., policy making, planning, and development.
 - budget allotments for staff, supplies, and equipment, facilities and allowances for the development, implementation, and evaluation phases of the nursing programme,
 - availability of university courses in related disciplines for nursing students along with other students.
 - living accommodation, bursaries, library, student activities, etc., available equally to nursing students and other students.

Method of collection

Assuming that the evaluator has access to materials describing the community setting, that is the context within which the programme is developing, the following methods may be used to gather evidence related to the initial planning stage:

(a) Interviews with persons involved in meetings related to the development of the nursing programme and in meetings related to the needs of the community or country for a nursing programme, the goals and plans for the programme, and the negotiation of resources.

(b) Analysis of reports and records of a variety of relevant materials, either written or on tape, to obtain additional information on the origins of the programme and its initial plans and resources. Such materials include correspondence, minutes of meetings, budgets, annual reports, publicity, curriculum and course plans and outlines, and other official records and reports.

Analysis

These findings can be viewed in terms of the criteria of relevance, relatedness and accountability and conclusions can be drawn to clarify and describe the responsiveness of the proposed programme to the requirements for health services of the community or country and to indicate the extent to which the planning group had identified and obtained the resources or the potential resources to accomplish the proposed goals. Inferences made at this stage permit tentative hypotheses with respect to the development of the programme in Stages B and C and, therefore, lend direction to the next steps of the evaluation. These hypotheses may be upheld or found untenable as the evaluation proceeds.

STAGE B — IMPLEMENTATION

The design for Stage B suggests approaches to the gathering of evidence on the teaching of nursing, the curriculum, nursing practice and research, and administration. The information collected on these aspects is analysed in relation to the criteria.

The *teaching of nursing* is concerned with providing such conditions as will permit students to proceed with the work of learning, and thus the teaching of nursing reflects the way students go about learning to nurse. These conditions comprise components of two kinds: components related to learning and components related to nursing.

Curriculum development involves planning and the conditions for learning to nurse in relation to the overall goals, taking into account the factors of concurrence and sequence in these conditions.

Nursing practice and research are aspects of a programme in which the teaching staff either apply, or experiment in, the practice of nursing making use of new knowledge from related disciplines, or in which they examine and analyse nursing practice and experience, their own included, with the object of discovering new knowledge in the field of nursing.

Administration is the function that provides the resources and processes to support and facilitate the development of the programme as a whole — staff and students, finances and facilities, communication channels, monitoring and decision-making, and so on.

Teaching of Nursing

Conditions for learning

The first question to be answered is: What are the conditions for learning to nurse? In its most basic form, that is the nursing of a patient,^a nursing is a complex set of acts mediated through a particular relationship that the nurse establishes with the patient. For this reason, nurses are required to be responsive to situations that are continually changing, always keeping the goal in mind. Because nursing involves complex forms of learning, whether in a programme in a hospital, college, or university, teachers of nursing must reject ways of learning such as conditioning, modelling, and imitation in which external reinforcement of non-rationalized behaviour is the norm. Learning to nurse might be characterized as a problem-solving process, therefore teaching must seek to provide conditions that enable students to interact with patient situations in a problem-solving way. As little literature is available on the teaching of nursing, an effort is made in this book to describe the process in some detail.

Problem-solving includes identifying the direction a situation is taking and the desired outcome or goal, assessing the problems that must be overcome to attain the goal, proposing solutions to these problems, and acting on these proposals to test their effectiveness in achieving the goal. Learning to solve problems requires nurses:

- to have certain knowledge and skills, and
- to interact satisfactorily with situations in a problem-solving way.

Knowledge and skills

When students enter a nursing programme they inevitably have the required knowledge and skills to begin to learn to nurse. Additional knowledge and skills are learned throughout the programme from other courses such as sociology, physiology, microbiology, and medical knowledge including diagnosis and treatment, and from the nursing course itself. In this way, the

^a The term patient denotes the basic unit or situation to which a nurse responds in providing nursing; however, the basic unit may be a family, a group, a ward unit, a community, or a country.

particular process of learning a discipline or skill to a certain level of attainment can be carried out unimpeded by the many complicating factors of the patient situation. The final stage of incorporating the manual skill or bit of knowledge into the nursing act requires additional learning which occurs in the process of problem-solving itself.

In planning the curriculum, some situations are not presented to students early in the programme because the required knowledge, amongst other things, is itself complex. Such knowledge builds on other concepts and ideas which must be learned first. However, the incoming students already have an elementary knowledge of personal hygiene; eating and nutrition; sleep, rest, and exercise; elimination; environment, etc. Many of the procedures and activities associated with this knowledge involve manual and technical skills that may thus be learned to an optimal level of performance by beginning students. For this reason, these skills are usually taught early in the programme.

Problem-solving

Interaction with a patient situation in a problem-solving way involves the following activities:

- Gathering information about the patient situation: observation of, and interviews with the patient and other relevant persons, e.g., family and professionals; study of reports and records; library study, and so on.
- Studying and analysing the information to understand and explain the nature of the patient situation; seeking alternative explanations; gathering further evidence for purposes of validation; identifying the most probable explanation of the facts; assessing the requirements of the patient situation and defining the nature of the nursing problem; suggesting alternative solutions, studying them as regards their consequences, and making decisions as to the best approach.
- Planning how the solution is to be implemented; the priorities and sequences; the time plan; coordinating the plan with other plans for the patient.
- Incorporating the skills of nursing into the plan of nursing action; identifying the progress of the plan as it unfolds; reassessing the problem and proposed solution, modifying it if necessary.
- Evaluating the consequences for the patient; reconstructing, examining, and analysing the process and outcomes of each phase; identifying feedback that is relevant to further problem solving in the particular situation; clarifying what has been learned; and proffering any hypotheses that seem warranted.

This sequence in problem-solving is not meant to imply that the process of learning is linear but that there is an underlying logic to the order of these activities in solving a problem and, therefore, in the practice of nursing; for the output of one becomes the input of the other.

Implications for teaching

Teachers of nursing must ensure that students have learned or are learn-

ing the required knowledge and skills, that particular patient situations demand. It must be remembered, however, that the demands of a particular patient situation depend to a great extent on the student's perception of the situation and, therefore, are dependent upon the nurse's ability to observe and assess. It is through solving more and more complex problems that students learn to nurse.

Through observing students learning to nurse, teachers gradually get to know the problems that students perceive as they proceed through a programme. Eventually a pattern of learning to nurse emerges. The perception of problems, in part a function of age and experience, is largely a product of the student's understanding of man, and in particular, of man in health and illness. For this reason, patterns of learning based on problems perceived are influenced by social and cultural factors and, therefore, differ to some extent in different cultures. As teachers learn how students react to people's problems in health and illness, they are in a better position to ensure that the students have the knowledge and skills required to assist them in understanding and solving the problems.

In determining the conditions required for learning skills, i.e., observing, planning, manual and technical skills, teachers should base their teaching on the knowledge available, in particular from psychology, on how different skills are learned. Such teaching may involve a variety of devices and materials — film-loops, games, simulated situations, and samples of real situations on audiotape, videotape and film — to help broaden the students' experience.

Example: Knowledge and information that the teacher requires to be able to teach how to give an intramuscular injection

1. Tasks or activities that make up the procedure.
2. Types of skill involved (psychomotor aspects).
3. Effects on performance of:
 - demonstration — by teacher, by film, film-loop or videotape
 - prompting — by teacher, by peers
 - different amounts and types of practice
 - self regulated practice
 - spaced practice
 - examination and analysis of performance
 - playback on videotape of the performance of the individual student
 - other means
 - individual student's response to the procedure
4. Rates of learning and levels of achievement.
5. Types of learning problems that students experience and modes of response of teachers.
6. Effectiveness of teaching the procedure in the usual way as compared with programmed instruction which permits choices as to rate of learning and methods and techniques to assist learning.

Teachers have traditionally devoted their efforts to teaching the knowledge and skills that are described here as a prerequisite to nursing and have considered that this represents the teaching of nursing. For example, teachers have often been heard questioning the student:

"What are you going to say to the patient?"

"How will you prepare the patient?"

Training a nurse to respond to artificial situations of this nature is in conflict with the problem-solving approach.

The critical function of the teacher of nursing is the ability to provide the conditions whereby the student can interact in a problem-solving way with the patient situation. The teacher must practise nursing in this way and be aware of the potential of the problem-solving approach in the practice of nursing and in the process of learning to nurse.

Types of teaching

One might think that the teaching of nursing varies greatly; however, it is probable that most approaches throughout the world can be classified under one of the following types:

- Type I No formal plan — teachers of nursing not employed. Students learn to nurse on-the-job, with teaching and assistance by the staff nursing personnel.
- Type II Teachers teach students mainly: knowledge, related and general, nursing procedures and technical skills, and other aspects related to hospital policy, etc. Teachers may supervise procedures, etc., with patients, but students learn to nurse mainly through guidance from staff nursing personnel.
- Type I Teachers teach nursing with the focus on nursing a patient, using the approach suggested in the following section where students learn to nurse patients whose problems are well understood.
- Type I Teachers teach nursing with the focus on nursing a patient using the approach suggested in the following section where students learn to nurse patients whose problems are less well known and understood.

Type I teaching is not dealt with in this paper. Type II has already been described and Type III and Type IV will be described in the following section. It must be noted that a typology is presented to demonstrate contrasts in the teaching of nursing. It is not suggested that any teacher always behaves as outlined in any one type. It is assumed that teachers use approaches of different types, but that there is a dominant trend in the approach to the teaching of nursing in any one individual and in any one programme.

Type III. The teacher assumes that the solution to the problem the patient (family, group, or community) presents is already known. In many cases, the nursing approach has already been formalized within the policies and procedures of the institution.

In Type III teaching, the teacher guides the student as to what to observe, the meaning to be attached to the observations, the most effective plan for coping with the problem, and the way the plan should be implemented. Students are evaluated on the basis of how well

they approximate the teacher's ideal and how well they reproduce the known approach and proven method for dealing with the particular problem.

The students already know about or have practised the specific activities involved in the overall plan; they rehearse procedures cognitively and, for some parts, in practice; they anticipate developments and problems as well as their responses; they have a well-constructed plan of what is to be accomplished, how it is to be achieved, how the participants (nurse and patient) will interact and what the outcomes will be for the patient. The teacher participates to remind the students of details they have omitted, to check on the sequence of events, to monitor the implementation of the plan, and to assist if required. Subsequent assignments confront the students with similar problems so that they may practise and eventually perfect their nursing skills. Students readily learn to nurse patients in particular situations and their need for teaching diminishes reciprocally.

Type IV. The teacher assumes that the extent to which problems are known varies and, in particular, that the nature of a problem in a patient-family situation cannot be fully known *a priori*.

In type IV teaching, the student observes and gathers information, the teacher and student review the observations and the student examines their meaning. The teacher may ask for further evidence to substantiate a relation between one bit of information and another, introduce a piece of evidence for consideration that cannot be accounted for in the student's rationale, or ask a question to elicit further relevant observations which the student should have made or is able to make. During this time, the student is reaching an assessment, setting priorities, and identifying and remedying gaps in information and in observations. The student discusses the assessment and the plan of action with the instructor and, given a certain proficiency in the appropriate manual and technical skills, the student endeavours to coordinate these approaches appropriately in response to the patient. In other words, the plan of nursing develops in response to the patient. The instructor is available at critical moments to demonstrate a method or approach appropriate to the situation that the student may not have already learnt.

Teaching is directed towards assisting the student to observe the patient's response to nursing care and to relate the outcomes to the goals implied in the assessment. This self-evaluation provides further information for the student to consider in subsequent nursing of the patient. In this way, students gain knowledge and develop their way of nursing.

Teaching of types III and IV provides examples of two divergent yet common approaches of teachers in assisting students to interact in a problem-solving way in a patient situation. These examples describe the student learning to nurse a patient; however they could be extended to other aspects of nursing in which the family, group, or community is the unit of care; health promotion is the focus; leadership and teaching are the objectives; and to aspects concerning intra- and inter-professional relations and ethics, and so on.

In addition to the conditions for learning that have already been described, there must be the appropriate "environment for learning". The setting must be favourable to, and supportive of, teachers and students engaged in the teaching-learning process.

The question of the motivation of students is important. Most students entering a nursing programme may be said to have a high level of motivation. Conditions for learning are required to enable the student to maintain and channel this motivation into learning to nurse in ways that are rewarding to that student. Many factors influence motivation adversely,

particularly if present in excess: repetition, bureaucratic directives and procedures, continual failure, demands and responsibilities beyond student learning, conflicting values in nursing and in teaching, and in general, factors that tend either to decrease or increase disproportionately the stimuli impinging on the student. Decreasing motivation in response to excessive stimuli has been well documented as have the rising levels of fear and anxiety with which it is associated.

Although an important criterion in selecting clinical situations is the quality of the environment for learning, the teacher must still intervene to act as a balancing agent with respect to the quantity and quality of stimuli that impinge on the student. The teacher's intervention decreases as the students learn to act on their own behalf in nursing the patients assigned to them. In addition to the stimuli of the clinical situation, students respond to the teacher, to their peers as well as to themselves. The nature of the relationship that teachers establish with students is critical to their effectiveness in supporting students while they learn to nurse. Such a relationship includes an understanding of the major factors influencing the student: availability to the student of assistance when necessary in coping with these factors, an awareness that learning to nurse takes time and thought, and a willingness to permit students to try out their own plans of nursing care. To back up this support, students require that the teacher monitor their learning and intervene on their behalf and that of the patient should a "life or death" or other critical occasion arise.

Nature of evidence

In evaluating a nursing programme, one should collect a good deal of information on the teaching of nursing, as this is the focal activity of the programme and the one most clearly associated with its outcomes. The information to be collected is directed toward answering three questions.

- How are the teachers teaching nursing?
- How are the students learning to nurse?
- How are the students nursing?

Although these questions are clearly related, there are no direct causal connexions between them. The division permits the evaluator to concentrate on teaching, on learning, or on the outcomes of both on the nursing performance of students. Additional questions may be posed in relation to the data collected in response to the three major questions as follows:

- How are students learning to nurse? Is the programme oriented towards solving predictable and known problems or towards solving more variable, unpredictable, and less well-known problems?
- Does the outcome, i.e., the student's nursing performance, substantiate the findings on how they are learning?

- What knowledge and skills have students learned at various stages of the curriculum? What is the rationale for viewing them as required skills? How are they taught and to what level or degree of expertise? By whom?
- How does the teaching of nursing change as students advance in the programme and learn to nurse?
- What are the main features of the environment for learning? How does the environment seem to influence the learning process?
- From a study of the teaching of nursing what goals are teachers endeavouring to attain in the education of nurses?

Learning to nurse has been described as the interaction of problem-solving with patient situations and the main features of this process, which is the foundation of teaching nursing, have been presented. The following tabulations outline some features that may be viewed as indicators of the ways of teaching, learning, and nursing for each phase of the problem-solving process for teaching according to Types III and IV, the two common approaches to teaching nursing described above.

A. OBSERVING AND ASSESSING

Type III

The teacher identifies the types of patient situations, the nature of the observations required and the data to be collected, and the associated assessments that such information generates (in preliminary courses or in the actual clinical situation). (The nursing required is known, therefore the content is established before the student begins; this knowledge is transmitted to the student through demonstration, modelling, and practice.)

The information the student collects is valid if it corresponds with the normal picture.

The student obtains information from the chart, from other records and lists, and from nurses and other professionals. This information provides the basis for planning care.

The student tends to have patients labelled according to diagnosis, with their needs and care specifically stated.

The student learns to accept medical and scientific knowledge and information obtained from staff in the agency or institution as the basis for knowing and assessing the needs of the patient.

Type IV

The student uses the patient as the primary source of information on his situation and secures knowledge relevant to his situation from a variety of sources. The teacher may suggest additional resources, if warranted.

The observations are described to the teacher, relations among the observations are explored, the teacher asking for further evidence in support of ideas and questioning or commenting to assist the student to review the topic.

Competing explanations or assessments of patient's needs are validated by supporting evidence, primarily from the patient, and by taking into consideration the logic of the deductions (other criteria enter as the student learns to nurse).

From the assessment, the student derives the objectives in caring for the patient and the general method to be employed to achieve them. The method is a descriptive programme presenting a coordinated view of the nature of nursing required for the patient. The plan of care is a long-term view taking into account the sequence of nursing approaches and practices. The specific details of nursing practice serve as examples of the method.

The student learns to validate observations and assessments by comparing them with those of other workers or those in the textbook.

The student learns to view nursing as a series of planned responses, each applicable to a type of patient situation.

The student learns the relationships between observing, gathering information, and assessing, between assessment and planning the method of nursing to meet the patient's needs, and between the method and the nature of planning.

The student learns to view nursing as a response to a patient.

B. IMPLEMENTATION OF PLAN

Type III

The teacher checks that the student knows and includes prescribed approaches, procedures and activities in the plan of care, whether the problem is preoperative preparation and teaching, death, pain, or personal hygiene.

The teacher expects that the student will proceed according to plan.

The teacher checks student performance of new approaches, procedures, and activities until performance is satisfactory.

The student's plan becomes a compilation of these approaches, procedures and activities and charting becomes a reflection of their accomplishment.

The student makes a daily plan through addition or deletion of individual approaches, procedures, and activities. The plan for the patient is made around the activities or demands of the ward or unit and the time schedule of staff — lunch, dinner, coffee.

The student becomes efficient and confident in carrying out the requirements of the medical care plan; the organization of activities is apparent, on time, and not readily altered.

The student expects that care will help the patient; further checking with the patient is unnecessary.

The student works with others, enjoys accomplishing the day's activities, and likes to get the work done.

The student is learning to practise and perfect certain approaches, procedures, and activities.

Type IV

The student may review and discuss the plan of care with the teacher, with the object of validating the assessment of the patient and evolving a plan of nursing, and of providing ways and approaches to achieve the objective of care.

The overall plan of care dictates the general nature of the daily organizational plan.

The student implements the plan, endeavouring to coordinate the nursing activities in view of the overall approach and in response to the patient as he is at that point in time.

The student notes how the plan of care is developing as a basis for deciding upon subsequent action for the patient.

The teacher knows that the student will gain confidence in nursing, but that confidence in responding to the patient situation on a daily basis must be earned to some extent with each interaction with the patient. The teacher realizes that each successive opportunity provides the student with more information to assist in responding appropriately to the patient and in coordinating efforts more effectively in view of the object of care.

The skill of the student in nursing the patient becomes more apparent each day as nursing becomes increasingly relevant and related to that particular patient.

The student spends time nursing patients and is not as immediately available for other types of task.

The student learns that nursing consists of following the details of the plan of care skilfully and correctly in all its aspects — nurse-patient relationship, teaching schedules, nursing procedures, and responsibilities in the therapeutic regime, etc.

The student learns to be responsible and accountable by nursing according to the proven and tried methods associated with the medical regime.

The teacher becomes aware of the nature of the assistance that each student requires and endeavours to be available at the critical moment for demonstrations, discussions, etc.

The student learns a way of nursing that involves solving problems as they are experienced in particular patient situations. Such problems may be viewed as complex, variable, and less well-known.

The student is learning how to be responsible and accountable for the nursing that he or she provides.

C. EVALUATION — FEEDBACK AND KNOWLEDGE

Type III

The teacher checks with the student that all approaches, procedures, and activities have been carried out and rewards the student accordingly.

If part of the plan, i.e., an approach, procedure, or activity, does not have the desired results, it is repeated. If the student is performing the procedure correctly, then the problem lies with the patient; he is not responding or cooperating as expected. The assumption is made that if you have certain knowledge and apply it and it does not work, then the patient does not fit the pattern. Such situations are referred to the nurse-in-charge.

The student learns to assess her progress by comparing her nursing with that which has been discovered to be effective and successful in the past.

The student learns that the responsibility for modifying or developing the plan of care lies with the nurse-in-charge, medical staff, supervisors, and those in authority.

The student learns that knowledge from related disciplines, particularly medicine, directs and guides the development of nursing, and learns that there are limits to the responsibility of the nurse.

Conferences

The teacher meets the student individually and reviews and checks:

- performance of various approaches, procedures, and activities in the plan;

Type IV

The teacher involves the student in examining how he or she nurses the patient including the sequence of events and related outcomes both for the patient and for the nurse.

The student learns to associate nursing with its consequences for the patient and to value those practices that serve the objective of care. When practices do not achieve a desirable outcome for the patient, the situation is re-examined in subsequent assessments and appropriate action is planned. Periodically, the results of the plan as a whole are evaluated in terms of the movement of the patient toward the objective and the objective itself is assessed in view of overall patient wellbeing.

The student learns that:

- (a) the development of the plan of nursing care for a patient is primarily a function of the nurse and the patient.
- (b) the scope of nursing is dependent on the quality of responsibility the individual nurse agent learns to assume.

Conferences

The teacher confers with students individually so that they may:

- examine, analyse, assess their experience in nursing the patient(s);
- attribute value to nursing in relation to outcomes;
- derive information to feed into subsequent assessments;
- review how they communicate their findings and plans, and to whom.

- effectiveness in achieving desired outcomes (particular outcomes for each procedure or activity, i.e., nurse-patient relationship, skin care, understanding of test, and so on);
- charting and reporting of care and outcomes;
- specific information to be considered in carrying out approaches, procedures, and activities for the following day(s);
- reward of student for correctness of performance in approximating expectations.

With a group of students the teacher selects a problem with which students are coping in their care of patients and the teacher asks them to review material on the problem and to present it in conference; the experiences of the students give an overall picture of the problem; ways of coping with the problem are reviewed as they are described by writers on the subject.

The teacher confers with a group of students involved in similar patient situations so that they may share experiences. (Given that the students in any one group proceed within some overall pattern in learning to nurse one can expect a similarity of focus in the various stages of the curriculum.) As students present their observations and experiences (e.g., the different nature of observations made by different individuals; responding to the family as the unit of concern; the problems of separation; the student's relation with the patient), they raise questions, pose hypotheses, and suggest approaches. Resource materials are considered; if appropriate, a further conference is held to enable students to provide new information; if not, individual students follow through in terms of their own needs. As students implement ideas appropriate to their situation, they do so within a framework of trial and experimentation and, in this way, derive small bits of knowledge of nursing to include in their repertoire for further development and evaluation.

The tabulation above describes two methods of teaching students to nurse thereby indicating the nature of the evidence that is required for assessing the teaching of nursing. It is assumed that most teachers tend to adhere to one or another of these types. Specific evidence relating to the teaching of attitudes, knowledge and skills and to the general environment for learning has not been considered in the same detail, however the requirements may be readily inferred from the introductory remarks on these topics. A few sample questions referring to these aspects are included:

- What amounts and types of knowledge do the students learn from related disciplines, i.e., psychology, physiology, interpersonal dynamics?
- Are the courses oriented to a vocation or are they directed to learning about the discipline itself?
- Are the courses for nurses or for students in general?
- Are the courses given by professors in the disciplines or by nurses?

Method of collection

The purpose of collecting data is not to evaluate the teaching of nursing, but to describe it as fully as possible in terms of staff, students, and courses. In other words, data collection is directed towards how teachers teach nursing and not from the negative point of view, i.e., how they are *not* teaching nursing; or towards how are the students learning and what are they learning, not how and what are they *not* learning. One is seeking to identify similarities and differences in the teaching of nursing among teachers,

among courses, and among groups of students in the different years of the programme, so that the teaching of nursing may be considered from the viewpoint of the criteria of relevance, relatedness, and accountability.

There is no simple approach to finding out how teachers teach nursing. Some standardized scales exist with regard to teaching in general, but they do not seem particularly relevant to the teaching of nursing. Many studies may be cited on the approaches researchers take in describing teaching.^{a, b}

One study included a content analysis of written responses of teachers to various questions pertaining to the teaching of nursing and, in addition, gathered information from students on their development and performance in nursing.^{c, d} The approach that is suggested in this book is the collection of information that indicates how a teacher is teaching nursing: teaching students to observe and assess; to plan and implement; and to analyse and evaluate.

Such information may be collected by:

- (a) Observation
 - conferences
 - clinical situation
- (b) Interview
 - teachers and students
- (c) Analysis of written materials
 - course descriptions
 - records and evaluations
 - students' assignments and nursing care plans.
- (d) Critical incidents, projective techniques, etc., to elicit particular data
- (e) Responses of teachers to questions and to sample situations.

For example: QUESTION

How did you as a teacher of nursing help a student to:

- observe
- assess
- plan
- relate to patient
- evaluate

Give an actual example in as much specific detail as possible in which the student is nursing an individual, family, etc.

Describe in one of your examples an actual problem in learning, how you responded, and the outcomes.

Give similar examples from your experience in assisting a group of students: (1) collectively within the same class; (2) separately, individuals being involved in a learning process that is to some extent unique to each individual.

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b. BELLACK, A. ET AL. *The language of the classroom*. New York Columbia University, Teachers College Press, 1966.

c. ALLEN, M. & REIDY, M. *Appendix to learning to nurse: the first five years of the Ryerson Nursing Programme*. Toronto, Registered Nurses Association of Ontario, 1971.

d. WHO Technical Report Series No. 347, 1966.

In your evaluation you have concluded that a particular student views nursing as a process. Give two examples in as much specific detail as possible, one from a beginning student and the other from a graduating student, as to the factors in the student's performance that lead you to this conclusion.

For example: SITUATION

Request teachers to respond to teaching situations (using audio- or videotape or films), and ask questions to elicit the teacher's perception of how and what the teacher is teaching and how and what the students are learning.

Analysis of responses

The teachers' responses to such questions and situations provide information on the meaning the teacher attributes to each of these words commonly used in nursing, the extent to which she can operationalize the terms and actually identify them in the behaviour or performance of a student. The responses give information on the extent of the teacher's knowledge of the performance of an actual student, i.e., the depth and expanse of the teacher's perception. Given a number of examples of the responses of a teacher, the evaluator can identify the particular focus of a teacher — its breadth and its specificity. Furthermore, the extent to which the teacher's strategy or method is actually a response to the student's need can be explored and probably assessed, if sufficient detail is provided.

In addition as part of the evaluation process, evaluators and teaching staff will wish to use instruments and procedures that they deem valuable and appropriate to the situation. These procedures that the evaluator develops to gather information will vary with the situation being studied and according to the knowledge and experience of the evaluator. Evaluators will eventually build test situations to determine how teachers teach nursing and as data are accumulated from different programmes and by different evaluators, the requirements for constructing of scaling devices will become clearer.

Analysis

Once the information on the teaching of nursing has been organized to answer meaningful questions, it should be possible to identify the main direction of teaching in the programme as a whole and the parts played by individual teachers in it.

At this point the criteria are important and in the following paragraphs brief examples are given of their application.

Application of criteria to teaching of nursing

Relevance. Teaching of nursing tends to be relevant if students learn methods of problem-solving consistent with the initial goals and plans of the programme as developed in Stage A and as portrayed in the nursing programme as it is implemented in Stage B.

Teaching of nursing fails to achieve relevance if students are learning to solve *known* problems in the provision of health care in a country where they are being prepared as leaders.

Relatedness. Relatedness is suggested if teachers are teaching similar methods of problem-solving, i.e., there is consistency of approach among teachers. If, in the first part of the programme, teachers adhere more to Type III whereas in advanced courses they favour Type IV, a low degree of relatedness may be said to exist. (Teachers frequently hold the false assumption that it is essential to learn to solve known problems before learning to solve less well known problems.) Relatedness is fostered if the environment supports teachers in their approach to teaching nursing.

A low degree of relatedness exists when teachers favour learning to solve variable and less well-known problems and the nursing staff of the unit regard the nursing problems that patients present as known and predictable. Relatedness is also low if the students take a number of courses in a university in biological and social sciences, while the teaching of nursing is directed towards learning to solve predictable and known problems.

Accountability. Accountability is operating where the teaching of nursing is regarded as the focal point of the nursing programme.

Accountability is lessened in programmes where teaching is directed towards the principles and skills of manual and technical procedures and/or medical and related knowledge. On the other hand, where teaching of nursing proceeds without sufficient scientific knowledge (biological and social) accountability also suffers. A programme fails as regards accountability when teaching is directed towards learning other roles in the health field that are not based on the fundamental nature of nursing.

Goals and Curriculum

The curriculum is a sequential plan for teaching nursing, that is a plan that outlines and describes the conditions for learning to nurse. This plan is based on:

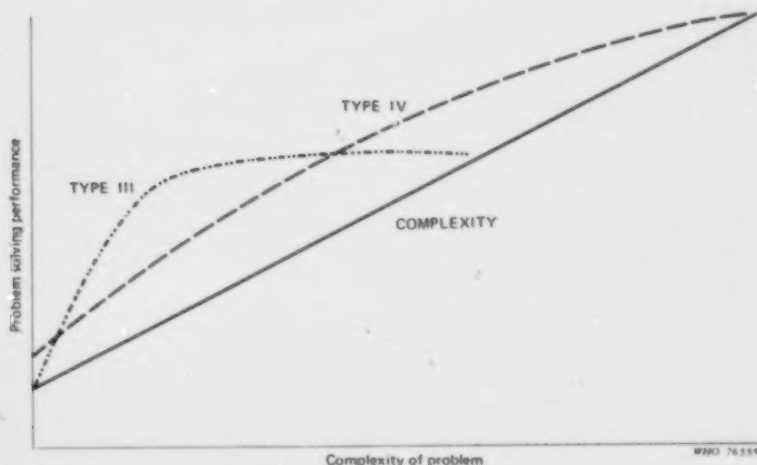
- (a) the process of learning to nurse — a problem-solving type of learning, which requires that the student has certain prior knowledge and skills.
- (b) the identification of situations of increasing complexity that require nursing.

The teaching of nursing has been described in the previous section. Learning to problem solve as an approach to nursing takes on further meaning in the real-life situations that confront nurses in hospital, community health centres, homes, etc. For the most part, nurses deal with crisis situations in the lives of people, people of different cultural patterns and of different ages. For the purposes of curriculum planning it is necessary to identify the factors that complicate these already complex situations rendering them more demanding and exacting for the nurse and, therefore, more complex for the student who is learning to nurse. As was noted earlier in the section on the teaching of nursing, the demands on the student of a patient situation are largely determined by the student's perception, observation,

and assessment of the situation. As teachers observe students learning to nurse they are able to identify the types of problem that students perceive as they proceed through the programme and this gives some guidance as to the required sequence of learning situations. As many complex factors are present in most patient situations, this knowledge helps the teacher to identify what students are able to learn from patient situations at different steps in their nursing experience and thus to adapt the teaching accordingly.

Considering the hypothetical model presented in Fig. 1, the straight, uninterrupted line depicts increasing complexity of patient situations. The interrupted lines denote learning curves related to problem-solving skill. Note that all situations have a degree of complexity and that all students have some problem-solving skill when they enter the course. It may be noted that with Type III teaching the rate of learning to problem-solve is greater at first than with Type IV teaching, but that learning continues and increases for a longer period of time under the Type IV system. Finally, students who learn to problem-solve with teachers following the Type IV system learn to solve more complex types of problem.

Fig. 1. Hypothetical relationship between the complicating factors in patient situations (complexity) and the problem solving performance demonstrated under Types III and IV teaching of nursing.



A number of the factors related to increasing complexity in patient situations are listed below:

Number of persons

The number of persons involved in the situation or in the unit of assessment — individual patient, family, group, community.

Visibility of phenomena

Phenomena of a physical nature are usually more readily noted than those of a social or psychological character. Phenomena that are few in number or that occur infrequently are usually more difficult to spot than phenomena that occur in larger numbers.

Stability of phenomena

Situations in which the phenomena remain the same over time are less demanding than situations where the phenomena change rapidly. For example, changes in a woman in labour are usually much more rapid than changes in a person recuperating from a cerebrovascular accident, and thus the former makes greater demands on the student.

Type of nursing skill required

Some skills are learned more readily than others, for example, psychomotor skills as compared with interpersonal skills. Patient situations that require predominantly interpersonal skills to assist the patient, are more demanding for a student nurse.

Emotional input

Situations perceived as immoral, criminal, etc., elicit a good deal of emotion, and therefore complicate nursing. Such situations are defined culturally: venereal disease, unmarried mothers, drug addicts, and patients with gunshot wounds are examples from one society.

Knowledge of phenomena

The more knowledge available about a situation, its assessment, and method of treatment, the less complicated the nursing required. Disease entities are better known and defined and the responses required of nurses more specifically outlined and developed than they are in situations directed toward the promotion and development of health with all the complexities, variations, and unknowns. For this reason, nursing directed towards health promotion, health education, etc., is more demanding of the student.

Situations where there are few precedents or guides to follow, for example, where health services are not well structured, are in the process of development, or are to be changed, provide a more complex problem for the student.

In developing a curriculum, teachers determine the complexity of situations that students should learn to cope with in view of the goals of the programme. This is the rationale for selecting clinical and other types of learning situations for student experience as opposed to explanations related to resources, requirements for service, and other demands that are expedient at the time. Once decisions regarding complexity have been made, teachers endeavour to arrange learning situations in order of increasing complexity, but students may still be involved in complex situations early in a programme in order to broaden their experience. The notion of complexity refers to situations in which the student actually nurses the patient, family, community, and so on. The curriculum plan is essentially an explanation of the selection and ordering of learning situations that reflect

student learning and support the teaching of nursing.

Although a curriculum is usually a long-term plan, these plans may be "open" or "closed". A "closed" plan is one that is fixed from the outset with respect to outcomes, specific content, and method. An "open" plan is one that evolves in matters of detail from one stage to another on the basis of the happenings and outcomes of the previous stage. Undoubtedly, as regards Type IV teaching, an "open" plan is more advantageous and supportive of learning to problem-solve in unknown and variable situations. "Open" plans allow teachers to gather information on how and what students are learning; and to arrange subsequent learning situations accordingly. As a matter of fact, curriculum planning becomes more rational, i.e., the quality of decisions pertaining to the selection and ordering of learning situations improves, as knowledge accumulates on student performance both in learning and in nursing. Such development in the curriculum could be expected to parallel development in the teaching of nursing, particularly for teachers who are predisposed to Type IV teaching methods.

Nature of evidence

In assessing a curriculum, one is seeking information on the rationale upon which the curriculum is based, on the method of implementation, and on the evaluation methods employed.

Rationale

Is the selection of clinical situations for student learning in accord with the purposes and goals of the programme as identified in Stage A and as evolving in Stage B?

In what way does the sequence of the clinical situations reflect (a) increasing complexity from the viewpoint of nursing, and (b) the process of learning in students?

What is the relationship between the teaching of nursing and the situations selected for student learning? Does the selection and sequence of learning situations support the development of teaching, which is itself a response to how students learn?

Implementation and evaluation

In what respects is the curriculum an "open" plan? A "closed" plan? To what extent is this aspect of the plan consistent with the approach to the teaching of nursing taken by the teaching staff?

How is the implementation of the curriculum monitored? What type of information is gathered? By whom? How is it used?

How are decisions made as to what is valuable or not valuable in curriculum planning? What provision is made for modification and development in the curriculum?

Method of collection

Information relevant to the above questions may be obtained through study of the curriculum plan and the constituent courses, through interviews and discussion with teaching staff, students, and staff nurses in various clinical situations, and through observation of committee meetings and in-

formal sessions related to curriculum planning, implementation, and evaluation.

One might compare the assignments of students in the different years of the programme as specified in the curriculum plan and by actual analysis and assessment of student performance in the assignments. The following questions are appropriate to evaluation of curriculum planning and implementation:

What is the nature of the change in assignments as students progress through the programme?

How do these changes reflect the sequence of learning as implied or identified in the curriculum?

How do these changes reflect curriculum goals or desired learning outcomes?

How are the values to be learned in nursing incorporated within the curriculum plan?

What is the rationale for this approach?

From the viewpoint of the teachers, how are values learned and how does the curriculum plan provide for this learning?

From the viewpoint of the teachers, what is the level of observing, assessing, etc., when the students come to them at various stages in the programme? What evidence do they gather to substantiate their answer?

Analysis

The criterion of relevance is in question if the clinical situations in which students learn to nurse are not basically representative of the situations that the students will meet after graduation. The criterion of relatedness concerns the degree of consistency between goals of the programme and the degree of complexity of the clinical situations with which students learn to deal. Secondly, relatedness should be a function of these situations and their sequence and the teaching of nursing throughout the programme. Relatedness is also expected to be evident between curriculum planning and implementation, and between implementation and evaluation. The criterion of accountability concerns the way in which each phase of the curriculum involves students in learning to expand their functions in situations of increasing complexity with respect to that which is essentially nursing (see pages 11-13) and whether they have the fundamental knowledge from the related disciplines to do so.

At this point, after analysing the evidence on teaching of nursing and on curriculum, one may consider some of the outcomes for the programme as a whole, that is assess its development in view of the overall goals and identify some of the factors that constrain or support the teaching of nursing and the curriculum.

Nursing Practice and Research

Nature of evidence

The way teachers use clinical facilities depends on their approach to the teaching of nursing (Types I, II, III, and IV). The degree of complexity demanded by the goals of the programme determines the types of clinical situation that are required in the curriculum. In Type III teaching, in which the ways of nursing are regarded as known, teachers seldom involve themselves in nursing other than to learn new procedures and techniques or to practise their skills. They spend little time in the clinical services or in the practice of nursing other than time spent directly with students. In Type IV teaching, where it is expected that nurses can continue to develop their potential in nursing throughout their careers, teachers are more apt to be involved in the practice of nursing. In this way teachers describe and examine their practice, noting development in nursing performance as well as problems. The teacher gathers information, tests out ideas, practises skills, and so on. It is a simple matter at this point for the teacher to involve the students in a similar process. In so doing, teachers influence nursing in the clinical situation and thereby improve conditions for learning to nurse for the students.

The involvement of the teaching staff with study and research in nursing reflects their involvement in the practice of nursing and their position with respect to the teaching of nursing. On the one hand in Type III teaching, research is directed toward testing out a new procedure, technique, or theory, usually from a related discipline; on the other hand, in Type IV teaching, research evolves as the teaching staff discover aspects of nursing, or problems for investigation, in the process of experiencing nursing and in studying and examining it. In Type IV teaching, research depends on a teacher's practice of nursing and the recognition or discovery of a problem requiring investigation. For this reason in Type IV teaching, research and the practice of nursing are closely associated and related to each other. In Type III teaching, problems for research in nursing tend to arise from the application or implications of new knowledge and ideas from related disciplines. For this reason in Type III teaching there is less need for an association between the teachers' practice of nursing and their research.

Either of these approaches to research and the practice of nursing requires discussion among the teaching staff and the administration, in addition to discussion with the health service agencies involved. Various types of relationship may be established between the educational institution and the health service agency and sometimes this may involve monetary arrangements and the definition and assignment of areas of responsibility. Information on the nature of trial arrangements to permit the teaching staff to practise nursing and carry out research is being eagerly sought.

Method of collection and analysis

Information can be collected and analysed in a fashion similar to that described in the section on curriculum.

Administration

The goal of the administrative plan is to provide the resources and to organize these resources in such a way as to support and promote the various aspects of the programme. It is through the administration that formal relations with the larger institution, be it educational or health, are established. Such relations influence reciprocally all aspects of the nursing programme and the organization of which it is a part.

Nature of evidence and method of collection

The following section provides a brief outline of the nature of the resources and organizational structures, including channels of communication.

Resources include:

- teaching staff — recruitment, number, type, preparation, promotion
- students — recruitment, number, type, preparation
- facilities — courses from related disciplines; university or otherwise; library facilities; student accommodation; physical facilities for clerical assistance; access to audiovisual media, laboratories, etc.
- finances — source, amount, purpose, controls
- clinical facilities — for student learning and for teachers' involvement in learning and in research
- personnel policies — salary, promotion, working conditions

Organizational structures including channels for communication:

- to allow for quality control within the nursing programme — descriptions of teaching and learning, provision for feedback.
- to allow the teaching staff to deal with particular types of problems — problems in learning to nurse and related approaches to teaching, admission, and promotion, etc.
- to permit participation of the teaching staff in the affairs of the institution
- to cooperate with institutions outside the programme — clinical facilities, government, public, etc.

Analysis

The relation of the criteria of relevance, relatedness, and accountability to the teaching of nursing and to curriculum is probably reflected in similar fashion in the administrative practices. Teachers who adhere to the teaching of nursing as described in Type IV, and favour a flexible approach to curriculum planning, undoubtedly monitor their performance in an attempt to attain better results. In such a situation, many channels of communication with the administration would be developed. There would be a good deal of concern over the congruency of the various factors that make up the programme — teaching, curriculum, clinical facilities, resources,

channels for communication, and so on. In time the adjuncts necessary to the teaching of nursing would be obtained.

A somewhat different administrative structure could be expected to evolve in a school where the teaching staff feel confident of their knowledge of nursing and of the teaching of nursing and where problems are not experienced in these domains (Types II and III). The need for discussion among teachers is less and individual teachers or groups of teachers can work more or less independently, for most of the knowledge necessary for nursing and its teaching would be available from literature or from particular people. In this type of programme, the committee would deal with the more formal problems of schools, such as admissions and promotions, and, in most cases, the pattern of routine would take care of the majority of cases brought to the attention of the committee members.

It is difficult to evaluate the administration, including resources and channels of communication, in relation to the needs of the curriculum and the teaching of nursing. It is probable that most of the constraints and barriers that confront the teaching staff are perceived by them to lie within the realm of administration — resources, organizational structure, and communication channels. These aspects can be fully described from the data collected on administration. A few questions relevant to the criteria follow:

Relevance

How does the administration ensure the relevance of the curriculum and the teaching of nursing to the needs of the particular community or country?

How are evolving community needs for health services dealt with in the context of the existing programme?

Relatedness

Do students admitted to the programme seem to have the basic education required to learn to nurse according to the goals of the programme?

Does the ratio of students to teaching staff appear congruent with the aims of the programme and with the approach to teaching?

Are the finances appropriate for the purposes of the programme?

Accountability

What is the administrative structure for dealing with external influences and demands, such as competing definitions and descriptions of nursing and different opinions as to the nature and amount of knowledge from related disciplines required by nurses?

Analysis of stage B — implementation

In assessing relevance, relatedness, and accountability at different times in a programme, we are able to see how that programme is developing. We note outcomes for students, the way they are nursing, and outcomes for the teachers, the way they teach nursing. We note some of the factors supporting the programme and how these are fostered, as well as the constraints and problems and how these are handled in relation to the purposes of the programme. At this stage in the study of a programme, it seems reasonable for the evaluator to make a statement on the development of the programme as a whole, to identify its direction, and to relate this direction

to the overall goals. As some of the developments feed back into the programme, we might expect to identify changes in the goals of the programme itself, thereby contributing to the degree of relevance that it attains. On the other hand, influences external to the programme or among the teaching staff may modify the goals thereby detracting from the degree of relevance that the programme has been attaining.

STAGE C — LONG-TERM OUTCOMES

The long-term outcomes of an educational programme are the ultimate effects or consequences and, therefore, tend to be persuasive and hold a dominant position when all the information on a programme is amassed for purposes of evaluation. This type of data presents problems to the evaluator, however, for the ultimate effects and consequences of a programme usually remain unknown for some time. In fact, although some long-term effects may be studied five years after the first graduation, others may not be visible for ten years or more; so much depends on the country and the context within which the nursing programme develops. Furthermore, the degrees of relevance, relatedness, and accountability in the present programme may bear little or no relationship to the long-term effects of a previous programme. Yet, these data are collected during the same period in an evaluation study. For example, an effective programme eventually achieves recognition and a reputation that may live on for many years despite the nature of the present programme. Given the problematical nature of data on long-term outcomes, the evidence may still contribute to an understanding of the programme as a response to needs of the community in terms of relevance and accountability.

Nature of evidence and method of collection

Manpower situation

If nurses are being prepared through their educational programme to carry out a particular function in society, we would expect them, in general, to be employed in positions involving this function and to be distributed in these positions in the community or country in numbers roughly proportionate to the need. The stability of nurses in their posts provides information concerning the suitability of the nurse to the position and of any potential for increased responsibility.

The following data are pertinent:

- Number of nurses graduated
- Number employed
 - by position, and distribution by position
 - in positions requiring more preparation
 - in positions requiring less preparation

Number unemployed
positions unavailable in desired location
other reasons
Number of positions (for which graduates prepared) unfilled
Potential for increasing responsibility and development
Mobility patterns
Number of changes in job since graduation (other than for reasons of promotion)
Year of graduation.

Nature of performance

Questions are often asked: How do the graduates perform? What is the quality of their work? These are difficult questions to answer, yet they are critical questions. A variety of data relates to this problem and the next section, dealing with the effects of the programme on the community, provides further information.

In seeking information on the nurse's performance, work descriptions can be obtained from nurses themselves together with their comments on their preparation in relation to the demands the situation makes upon them. Detailed descriptions may be obtained on how nurses deal with common problems, i.e., health problems, problems in coordination and team work, problems in justifying a path for therapy that is somewhere between scientific medicine and traditional health beliefs and practices, problems in gaining community understanding and support. This type of material will assist the evaluator to identify how the nurse approaches problems: the nature of the data base the nurse gathers, its relation to the definition of the problem and to the nursing response provided, the final outcomes, and the approach to evaluation employed. Information from employers, other professionals, community workers, etc., on the nature of nursing in their institution and community provides further information on what nurses do. The type of data suggested in this section can be obtained through observation, interview, discussion, and the study of written materials prepared by nurses: patient and family reports, annual reports of the service, plans of care, etc.

The remarks an evaluator makes concerning the performance of nurses who graduated from the programme will be more valid if they are based on information from many sources.

Outcomes for the community

If the graduates of the programme are sufficiently numerous and have oriented their nursing according to the needs of the community, one might eventually expect some positive change in the health picture, in the environment for health, and in the potentials for health in the community. In addition, the viability of the health service(s) to which they are attached should increase proportionately. Although it is expected that nurses should participate in health affairs at the community level even when their numbers are small, one would look for increased participation at higher levels as the graduates, particularly of a university programme, become more numerous.

Undoubtedly it is difficult to measure these outcomes for the community

and, doubly difficult to attribute them to nursing or to the work of the nurse. However, it is expected in many countries that nurses will participate increasingly in the development of local health services directed toward smaller communities. It is in these settings that some assessment of the outcomes of nursing services for the community can be realized. In fact, a 3-5 year experimental study involving an experimental community and two or three similar control communities would provide the baseline data that are sorely needed. Among the experimental and control communities, similarities such as the state of health and of the health services, educational background, nutritional state, economics, as well as size, family life, and relations with the outside world, would probably suffice. It would be relatively simple to choose three or four target variables as tracers and to assess these prior to the opening of the health service and nursing care and to measure them periodically throughout the life of the study: for example, two major health problems, two critical health hazards, and one or two potentials for health. The more critical the variables, the greater the chance that changes will occur after the institution of a health service and nursing care. Thus the researcher needs to know the communities exceedingly well to be wise in the choice of criterion variables. Suitable experimental designs have been outlined by Campbell & Stanley.⁸

The use made of a health service is an excellent indicator of its value to the community. The nature of use might be expected to change from concern with illness to concern with health, from the concerns of the individual to those of the family, and from emergency or episodic treatment to long-term care.

Statistics on use, both qualitative and quantitative, should be obtained. A simple "encounter form" might be devised to gather information on: reasons for seeking the services of the nurse and health service; a description of the service obtained; the person's response to the care received and his feelings about the state of his health or illness; his intention to follow up the treatment or advice given; his plans for further visits or for visits by other members of his family or friends, etc.

Viability of the programme

If the programme in the school of nursing is shown to be viable the recruitment problem should diminish in terms of both quantity and quality of applicants. An increase in the rate of growth could be expected along with a decrease in attrition, to the point where the numbers of graduates fill the positions available and a steady state is reached. With the growth of the school the resources available should increase proportionately and a certain stability in terms of needs and resources should be reached. The school should establish a reputation in the university or institution on the basis of the work of staff and students, and in the community generally, because of

⁸ CAMPBELL, D. & STANLEY, J. Experimental and quasi experimental designs for research on teaching. In: Handbook of research on teaching. Chicago, Rand McNally and Co., 1963.

the nursing performance of the graduates and their contribution to community health status.

It is not possible to provide a formula for the analysis of costs and benefits. Once data become available for a number of teaching programmes, the outcomes and long-term developments and the costs per graduate may be compared for the different programmes.

The viability of an educational programme is usually related to its quality and yet viability may be affected by the political context within which it develops. Examples abound of viable programmes that fail to prepare nurses adequately to meet the health needs of the community or country, have excessively high attrition rates year after year, or never obtain the resources to develop as they might. On the other hand, a programme may achieve a fine reputation that supports its viability long after the programme has deteriorated.

Analysis of outcomes

Information on the employment situation of the graduates, on their performance, on the outcomes of their services to the community, and on the viability of the nursing programme itself, provides a picture of the long-term development of the programme. This account enables the evaluator to consider the ultimate outcomes of the programmes in view of the criteria of relevance, relatedness, and accountability.



ANNEX 2

FRAMEWORK FOR ANALYSIS

This annex comprises a number of suggested frameworks and forms for analysing the information collected in the various stages of the study. Each of these aims to classify the information collected and to identify the steps to be taken in assessing the evidence in view of the criteria and in summarizing these assessments in terms of development. In relation to the findings on development, the frameworks help to identify the questions to which evaluation seeks answers.

The proposed forms are not exhaustive and the evaluators or teaching staff may wish to supplement them with additional questions and material or to provide alternative plans for the analysis of data. Evaluators will undoubtedly find that they do not have information on all aspects of the development of the programme. Information may not be available or the evaluator may concentrate the evaluation study on particular aspects of the programme.

It is suggested that the forms be completed in detail so that the evidence to support the conclusions of the evaluation is described fully and is available to the reader.

1. Initial planning stage

A. Suggested framework for analysing information

Response to community	Resources
1. Individuals involved in planning stage (a) Position (b) Representing — community, internal or external — government — health professions — nursing educational institutions — public (c) Nature of participation — amount — regularity — contribution — biases 2. Planning group (a) Size (b) Length of planning stage (c) Regularity of meetings and action (d) Group process and leadership 3. Planning process (a) Information on community (b) Quality of information — scope and amount — currency — validity — appropriateness (c) Analysis and assessment — facts selected — inferences, conclusions — consensus, opposing views (d) Relation between the study of community, the rationale for the programme and the planning group's decision concerning the goals of the programme (e) Other decisions of planning group — type of nurse — type of programme — location of programme — location of programme within institution — curriculum plan — relation with health agencies	1. Nature and amount of support (a) Publicity, endorsement (b) Financial — facilities — personnel — students — programme (c) Other 2. Requested, obtained, or committed 3. Source — community, provincial, national, private 4. Relationships with parent institution or sponsoring body concerning resources (a) Position within institution - Planning for Advisory Group - Planning for committee structure - Participation of school in policy making of institution, planning, development (b) Budget allotment — students — teaching staff — facilities — supplies and equipment — programme — development, implementation, evaluation — library (c) Availability of related courses — physiology — psychology, etc. (d) Student facilities — living accommodation — bursaries (e) Clinical facilities

B. Participants

Name	Position	Representing community or external	Nature of participation
		Government health services	Amount, regularity, contribution, biases

- Group meetings:
 - size of group
 - number and regularity of meetings
 - span of time of meetings
- Representativeness:
 - over-representation
 - under-representation
 - no representation
- Group dynamics:
 - leadership
 - other roles

Criteria	Comments relevant to development of programme
Relevance:	
Relatedness:	
Accountability:	

1(a). Initial planning stage — Response to the community

A. Analysis and assessment of community information

Type of information considered	Quality of information	Analysis and assessment	Final assessment
1.	Factors to be considered for each type:	For each type of information:	Consensus of group:
2.	— scope and amount	— factual information selected or considered important	
3.	— currency	— conclusions drawn, or	Opposing views:
4.	— validity	— inferences made	
5. etc.	— appropriateness		

B. Assessment of community study

Criteria	Nature of information considered	Quality of information	Analysis and final assessment
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Relevance:

Relatedness:

Accountability:

Comments related to development of programme:

1(a). Initial planning stage — Response to the community (concluded)

C. Rationale for programme — goals (arises out of final assessment in community study)

Relevance: Given that the rationale for the programme is relevant to community, how is this relevancy demonstrated in the goals?
Given that the rationale for the programme appears to have a low degree of relevancy for the community, are the goals relevant to the rationale or to the community?

Relatedness: What is the relation of aims and purposes to the rationale?

Accountability:

Comments relative to the development of the programme:

D. Assessment of other decisions made

Area	Decision	Criteria of relevance, relatedness, and accountability
Type of nursing function		
Type of programme		
— basic		
— post-basic		
Location		
— college		
— hospital		
— university		
— independent		
Location in institution		
— school		
— department		
— sub-department		
— faculty		
Curriculum plan		
— length		
— related courses		
— physiology		
— sociology, etc.		
Relations with health agencies for clinical practice		

Comments relative to development of programme:
(Consideration of the relatedness of these decisions to each other and their relevance and accountability as a group)

1(b). initial planning stage — Resources

A. Source and nature

Source of support	Nature and amount of support	Support			Comments
		Requested	Obtained	Committed	
Community (Dept., Section, Persons)	<i>examples:</i> — publicity — endorsement — financial — facilities — personnel — students — programme — other				
Province, State					
National					
Private					

B. Assessment of resources

Criteria	Community	Provincial	National	Private
Relevance:				
Relatedness:				
Accountability:				
Comments relative to development of the programme: Does the source of resources interfere with relevance of the goals to the community, with relatedness of possible methods and activities to goals, and with accountability to nursing and health professions? Relatedness of support for all aspects — facilities, personnel, students, etc. and the relation of the magnitude of the resources to goals and work to be accomplished. Are there resources which have not yet been committed as to purpose?				

1(b). Initial planning stage — Resources (continued)

C. Availability of resources from parent body or sponsoring body
(including assessment according to criteria)

Position within institution

Planning for advisory group

Planning for committee structure

Participation of school in policy making of institution, planning, and development

Budget allotment

For — students

— teaching staff

— facilities

— supplies and equipment

— programme — development

— implementation

— evaluation

— library

Availability of related courses

Physiology, psychology, etc.

Student facilities

Living accommodation

Bursaries

Clinical facilities

2. Implementation stage — Teaching of nursing

A. Required preliminary courses

Knowledge	No. of hours	Placement	Name and position of teacher	Nature of student body	Comments
Related courses					
Physiology					
Microbiology					
Sociology					
Psychology					
general					
growth and development					
Medical science					
Nutrition					
Other					
General courses					
Language					
Literature					
Humanities					
Sciences					
Other					

2. Implementation stage — Teaching of nursing (continued)

B. Assessment of required preliminary courses in relation to criteria

Relatedness

(i) If students are to solve complex problems in nursing and the health field, are they receiving sufficient preparation? Are they being taught by Type IV methods?

Disciplines

- Are the students required to understand the content and method of the discipline as *opposed to* appreciating the content as applied to health and nursing problems?
- If the emphasis is on knowledge of the discipline, the course will usually be a regular university or college course, taught by a member of the discipline to students from a variety of particular programmes or areas of study.

General courses

- Does the course deal with the nature of man from a variety of perspectives, i.e., philosophy, language, literature, political science, economics, etc.

(iii) If students are to solve well-known problems in nursing and the health field, are they receiving sufficient preparation? Are they being taught by Type III methods?

Disciplines

Here courses are frequently organized around specific health and nursing problems and the knowledge content is focused so that

- the relation between problem and solution is more readily apparent and the outcomes more predictable;
- the student has sufficient knowledge to recognize the problem and its manifestations, to understand fully the rationale for the solution, to predict the outcomes given a basic set of varying circumstances, and to evaluate the results.

Accountability

Are the related courses sufficient to enable students to learn to nurse in an optimum fashion given the type of programme and the category of nurse?

Relevancy

Comments relative to the development of the programme:

2. Implementation stage — Teaching of nursing (continued)

C. Teaching of required preliminary courses

Procedures and technical skills	When taught	Method of teaching	Degree of skill observed
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D. Required preliminary courses — assessment of student's proficiency in relation to criteria

Relatedness

How do students hold and display knowledge underlying the various procedures and technical skills?

How do students display proficiency in the required procedures and technical skills so that they are able to concentrate on learning to nurse the patients? Is there a basic preparation in learning procedures and skills? Are there means of reviewing procedures and skills prior to use — videotapes, filmloops, equipment, etc?

Relevance

Accountability

Comments relative to the development of the programme

2. Implementation stage — Teaching of nursing (continued)

E. Description of the students' nursing performance

All the evidence accumulated on students learning to nurse may be organized to provide a picture of how students are nursing, that is the goals they are achieving, at three or four points in the programme — beginning, middle, and end.

Examples of critical aspects of nursing performance:

- How the nurse approaches a patient^a situation
- Types of problem the nurse perceives:
 - nature of observations, problem of validity
 - relating, assessing
 - planning — long-term and short-term priorities
- How the nurse implements the plan of nursing:
 - integration of various nursing skills
 - appropriateness to patient situation
 - responsiveness to situation
 - demonstration of interpersonal skills
 - demonstration of knowledge, procedures, and technical skill
- Evaluation — use of feedback

^a The term patient denotes the basic unit or situation to which a nurse responds in providing nursing; however, the basic unit may be a family, a group, a ward unit, a community or country.

F. Assessment of students' nursing performance in relation to criteria

Numerous examples of the nursing performance of students have been discussed in the section on the teaching of nursing and have been considered with respect to the criteria of relevance, relatedness and accountability.

Relevance:

Relatedness:

Accountability:

Comments related to the development of the programme:

2. Implementation stage — Teaching of nursing (concluded)

G. Assessment of teaching of nursing in relation to criteria

Examples of teaching performance

The teacher's participation and responses as the student approaches and copes with the nursing situation

Student-teacher relations

Teaching behaviour in teacher-initiated situations

in student-patient situations

teacher-student situations

small conferences

other settings

Numerous other examples have been presented in Annex 1.

Relevance:

Relatedness:

Accountability:

Comments related to the development of the programme

2. Implementation stage

H. Suggested framework for analysing information

Goals and curriculum	Practice of nursing and research
1. Selection of clinical situations in relation to the goals and purposes of the programme. 2. The relation between the order of clinical situations and the nurse's increasing ability in problem solving and in nursing generally. 3. The flexibility of the curriculum plan (see p. 40 of report). 4. The nature of the information collected about the curriculum plan and the teaching of nursing — by whom, in what situations, and how it is used. If it is used in further planning or to assist teachers in the teaching of nursing, describe these uses. 5. Mode for making curriculum changes — type of rationale presented, evidence required, decision making process, and plan for implementation.	<i>Use of the clinical facilities</i> 1. To be up-to-date — review and learn procedures and technical skills — apply new knowledge — practise other aspects of nursing 2. To test out a theory or to test an instrument. 3. To discover new knowledge — Practise nursing and to analyse the practice — discover problems for research — identify new knowledge in nursing <i>Relations between clinical practice and the nursing programme</i> 1. Relations when the purpose of the teaching staff is to keep up-to-date. 2. Relations when the purpose of the teaching staff is to use the clinical facilities as the setting to carry out research projects. 3. Relations when the teaching staff wish to practise nursing for the purpose of discovering problems as a basis for nursing research. Information on relations would include: 1. Type of appointment of staff in nursing service agency or of nurses in the nursing programme. 2. Financial arrangements. 3. Ethical considerations. 4. Definition and assignment of responsibilities. 5. Expected benefits.

2. Implementation stage (continued)

H. Suggested framework for analysing information (continued)

Administration	Administration (continued)
1. <i>Teaching staff</i> (a) Recruitment — sources of supply relationships with other educational programmes, agencies, degree of professional contact (b) Selection — criteria preparation, experience Selection — process screening, references, interview decision-making procedure (c) Number of staff (d) Composition (e) Preparation basic — post-basic nature of special knowledge and skill experience (f) Demographic and social data of staff	3. <i>Personnel policies</i> Terms of appointment Orientation Salary Promotion — criteria — process increment, tenure, sabbatical leave Working conditions Fringe benefits 4. <i>Facilities</i> (a) Courses from related disciplines — current or otherwise number type quality where given (b) Library facilities (c) Student accommodation and facilities quantity suitability (d) Clerical and secretarial assistance (e) Staff accommodation (f) Learning environment (g) Access to media — audio, videotape, film, etc (h) Finances sources amount budget control (i) Clinical facilities — for student learning and for teachers' involvement in the practice of nursing and research nature of nursing performed quantity of facilities accessibility conditions for learning field for research criteria
2. <i>Students</i> (a) Recruitment — source — process (b) Selection — criteria general and educational qualifications academic ability goals and expectations references health record Selection — process screening counselling decision-making (c) Demographic and social data of students (d) Number applied enrolled attrition (e) Composition (f) Improving student welfare, student health services	

2. Implementation stage (concluded)

H. Suggested framework for analysing information (concluded)

Administration — organizational structure and channels of communication

1. To allow for quality control within the nursing programme — ongoing descriptions of teaching and learning, provisions for feedback. (a) Two-way flow of communication (top to bottom) (b) Peer review (c) Course descriptions (d) Student achievement (e) Staff supervision (f) Plans for faculty development (g) Promotion — nature of promotions — grounds for promotion 2. To allow the staff to deal with particular types of problem, i.e., problems in learning to nurse, and approaches to teaching admission and promotion, etc. (a) Delegation of authority and responsibility (b) Interdisciplinary contacts (c) Research studies (d) Experimental projects (e) Committee structure (f) Plans for faculty development	3. To permit participation of the staff in the affairs of the institution (a) Staff participation in policy-making and in decision-making interdepartmental conferences (b) Staff participation in determining needs for teaching equipment, supplies, facilities, student welfare (c) Approval of staff recommendations (d) Committees - responsibilities commensurate with interests, preparation, and degree of responsibility in the programme - defined responsibilities - defined procedure - distribution of outcomes 4. To relate with other institutions — clinical facilities, government, public, etc. (a) Extent of collaboration, type, sources (b) Exchange of ideas — meetings, joint committees (c) Support of legislation
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3. Long-term outcomes

A. Suggested framework for analysing information

Manpower situation	Nature of performance
1. No. of nurses graduated	Nature of problems
2. No. of nurses graduated by year of graduation	— Nurse perceives
.....	— Appropriateness of problems nurse deals with in relation to preparation
3. No. employed by position	data gathered
.....	definition of problem
4. No. employed by position or by distribution and position	scope of context considered
.....	Assessment
5. No. employed in positions requiring more preparation	— Relating evidence
6. No. employed in positions requiring less preparation	— Involvement of patient, family or community in assessment
7. No. unemployed	Relation of plan to assessment
Positions unavailable in desired location	Action
Other reasons	— Interpersonal abilities
8. No. positions unfilled (for which graduates prepared)	— Flexibility of implementation
.....	— Care and follow through in implementation
9. No. of changes in job since graduation	— Skill in other aspects of nursing
Reasons	Evaluation
10. Potential for development	— Gathers information on process and outcomes
No. of changes in job for reasons of promotion	— Accountable for results
	— Uses information for further assessment and planning
	Approach to nursing at the community
	— Responses of observer
	— Responses of receivers of care
	— Responses of employers

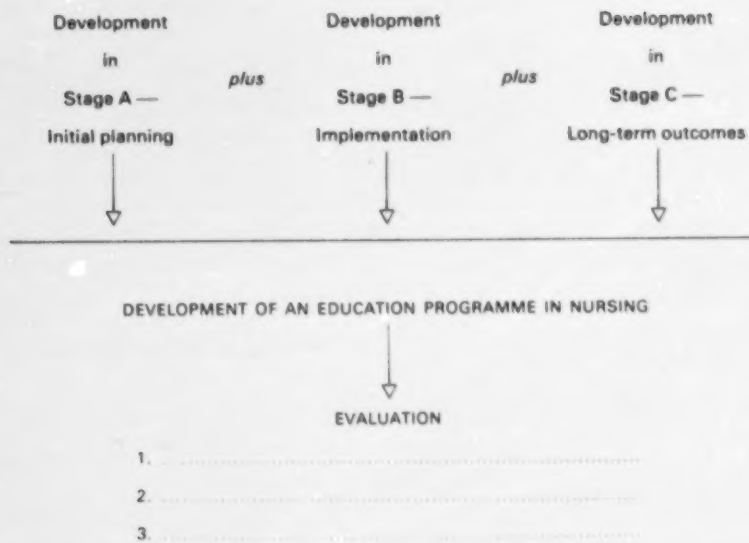
3. Long-term outcomes (concluded)

A. Suggested framework for analysing information (concluded)

Outcome for community	Viability
1. Health-illness picture — mortality, morbidity — particular tracer problems — general health status — community concern for assessment 2. Environment for health — sanitation — communicable disease control — pollution — coordination of relevant personnel — community concern, organization, and plans 3. Potentials for health — utilization of health services by whom — individuals or families, types of families, groups, sectors — for what purpose — crisis situations, treatment, health problems, maternal/infant, etc. — regularity — response to the encounter, follow-up, outcome — cost-benefits — immunization practices — community organization — concern for health, environment, treatment and care services, etc. — family responsibility for health and environment — concern for wellbeing of family and its members — nutrition — healthy living practices — care in illness — follow-up of long-term rehabilitation — tempo of family building — mother/infant, toddlers — participation in community organization — concern with health and ecological problems — understanding of available health services — location, purposes, etc. 4. Participation in health affairs - nursing personnel - community personnel	1. Recruitment — selection pool of desirable applicants 2. Attrition rate — stability 3. Staff — numbers and quality 4. Resources — financial, physical, clinical 5. Reputation — community, employing agencies, other health professionals 6. Cost-benefits 7. Relations with health agencies — input into nursing service — involvement with problems of health care and delivery services 8. Relations of school with Government, Department of Health, other programmes for health professionals

4. Evaluation of programme development

A. Suggested framework for analysing information



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